

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026788**Date Inspected:** 30-Nov-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Bernie Docena and Fred Von Hoff			CWI Present:	Yes	No
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No N/A
				Delayed / Cancelled:	Yes	No N/A
Bridge No:	34-0006			Component:	SAS OBG	

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

QA randomly observed ABF/JV qualified welder James Zhen continuing to perform Complete Joint Penetration (CJP) groove back welding fill pass on Orthotropic Box Girder (OBG) 13E/14E bottom plate 'D2' (0mm to 8500mm) outside. The welder was observed welding in the 4G (overhead) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3110-4. The welder was using a track mounted welder holder assembly that was remotely controlled. The joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The gouged and ground non-Seismic Performance Critical Member (SPCM) splice butt joint was also Non Destructive Testing (NDT) tested using the Magnetic Particle Testing (MT). The splice joint was continuously preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blankets located on top of the plate prior welding and maintained by moving the heater blanket at the side of the plate being welded during welding. The vicinity was properly protected from wind. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder. Measured welding parameters during welding were 235 amperes, 24.0 volts and 180mm travel speed. Calculated heat input was 1.9 Kjoules/mm which appears in compliance to the contract requirements. At the end of the shift, FCAW-G cover pass welding was still continuing and the welder has held the preheat of more than 200°F for three (3) hours after welding as required.

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At OBG 14E-PP125-E4-#1 lifting lug hole infill plate to top deck plate inside, ABF welder Erick Sparks was observed continuing to perform 4G Shielded Metal Arc Welding (SMAW) back welding cover pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8" diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1110A Rev.1 for the Seismic Performance Critical Member (SPCM) butt joint. Prior back welding, ABF QC Bernie Docena was observed performing Magnetic Particle Testing (MT) on the ground surface of the back gouging with positive result. During welding, ABF QC Bernie Docena was noted monitoring the welder's welding parameters with measured working current of 126 amperes on the 1/8" diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, cover pass welding on the bottom side location of the butt joint was completed and the welder has moved to another lifting lug hole OBG 14E-PP125-E4-#2 and started fitting up the infill plate to the top deck plate.

At OBG 13E/14E edge plate 'F' inside, QA randomly observed ABF/JV qualified welder Fred Kaddu continuing to perform fill pass to cover pass welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with backing bar that was removed and back gouged. Prior welding, the plates were preheated to 150°F using propylene gas torch. During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters of the welder. Measured welding parameter during welding was 130 amperes on a 1/8" diameter E7018H4R electrode. At the end of the shift, cover pass SMAW welding was completed.

At OBG 14E, the two lifting lug holes to top deck plate adjacent base metal (approximately 6" to 8") were tested using Magnetic Particle Testing (MT) in addition to the same test that was performed to the same holes for the purpose of information only in view of the found linear indication on one (1) of the lifting lug holes. The remaining lifting lug holes that were not MT tested today will be done tomorrow or when the welding is completed and access is available.

Location Remarks

1. OBG 14E-PP125-E4-# 3 & 4 Two lifting lug holes adjacent base metal noted without linear indication.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of nine (9) vent/lifting lug hole infill plates to top deck plate butt joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

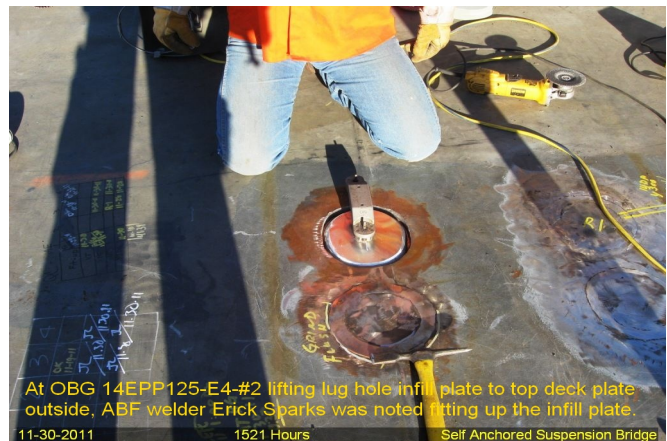
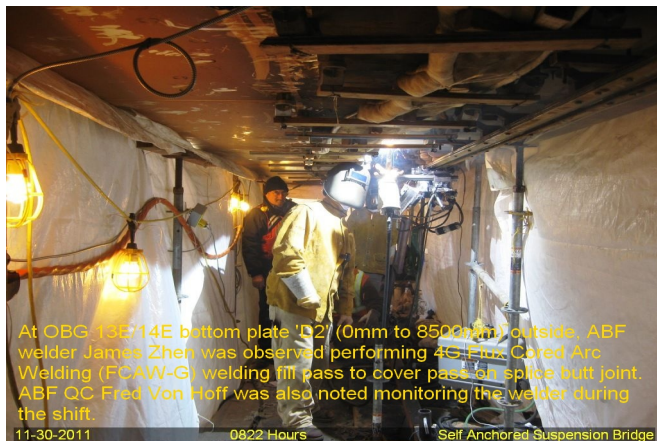
1. OBG 14E-PP125.7-E3.2 vent hole infill plate to deck plate outside - QA VT/MT verified
2. OBG 14E-PP126.2-E3.7 vent hole infill plate to deck plate outside - QA VT/MT verified
3. OBG 14E-PP126.7-E3.7 vent hole infill plate to deck plate outside - QA VT/MT verified
4. OBG 14E-PP126.7-E4.2 vent hole infill plate to deck plate outside - QA VT/MT verified
5. OBG 14E-PP125.2-E5 vent hole infill plate to deck plate outside - QA VT/MT verified

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6. OBG 14E-PP126.7-E5 vent hole infill plate to deck plate outside - QA VT/MT verified
7. OBG 14E-PP125.2-E4.2 vent hole infill plate to deck plate outside - QA VT/MT verified
8. OBG 14E-PP125-E4 lifting lug hole infill plate to deck plate outside - QA VT/MT verified
9. OBG 14E-PP125-E4 lifting lug hole infill plate to deck plate outside - QA VT/MT verified

This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.



Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer